

7/18/2003

To: Beverly Gaines
From: Ching-Pi Wang
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Subj: Midway Landfill Exit Strategies Long Term Management

EPA Region 10
Deemed Releasable

1. Site Name, Location, Description, and History

CONFIDENTIAL

The Midway Landfill is located between Interstate-5 (I-5) and Highway 99, and between S. 252nd Street and S. 246th Street in Kent, Washington, directly east of the city of Des Moines. The landfill is approximately 60 acres in size with refuse buried on about 40 acres and at depths over 100 feet. From 1966 to 1983, approximately three million cubic yards of solid waste were deposited at the Midway Landfill. The landfill is now owned by the City of Seattle.

Because of the remedial work performed by the City of Seattle since 1985, environmental conditions have greatly improved. The landfill is now covered with a multilayered engineered cap, with a top layer of grass. The landfill is fenced and access is limited. A gas extraction system is in place and operating throughout the landfill. Because of these actions, potentially explosive landfill gas does not leave the landfill property and the quality of the groundwater leaving the landfill has greatly improved. The city's estimate of closure costs amounted to about \$56.5 million as of 1995.

Land use in the landfill vicinity consists primarily of commercial activities and residential areas. Commercial establishments and light industry and manufacturing border both sides of Highway 99 in the area. Two elementary schools, Sunnycrest Elementary School and Parkside Elementary School, and a city park, Linda Heights Park, are within a half-mile radius of the site. Most of the nearby residences are detached single-family dwellings, with some multi-unit residential developments to the south and west. Several mobile home parks are also in the vicinity. A six-acre wetland, the Parkside Wetland, located to the east of the Parkside Elementary School and west of the landfill is a naturally occurring detention basin for local surface water



runoff, primarily from the west side of Highway 99.

There are no wetlands, flood plains, rare, threatened or endangered species, or sites on or eligible for the National Registry of Historic places at the site. Storm water from the site drains into McSorley Creek, which is a salmon-bearing stream containing coho and chum salmon, steelhead and cutthroat trout. Coho salmon is a candidate for listing under the Endangered Species Act.

The State of Washington Department of Ecology (Ecology) has been the lead regulatory agency for the cleanup work at Midway Landfill since the mid-1980. While the U.S. Environmental Protection Agency (EPA) has prepared and released a proposed plan and this ROD, EPA expects Ecology to continue to be the lead cleanup regulatory agency overseeing this remedial action. The work has been, and will continue to be, conducted by the City of Seattle.

From 1945 to 1966, the site of the current Midway Landfill was operated as a gravel pit. Originally, the pit was adjacent to a natural drainage basin often used as a settling pond. This basin, known as Lake Meade, was located northeast from the center of the present landfill. As the pit was mined, water was drawn from Lake Meade to wash silt and clay from the gravel and sand, and then returned to the lake. This silt and clay settled on the lake bottom. Near the end of the gravel pit operation, the lake was drained into the southern end of the gravel pit, depositing a layer of clay and silt into the bottom of the pit. This layer of fine materials currently underlies much, but not all, of the present landfill.

In 1966, the City of Seattle leased the site and began using it as a landfill. From 1966 to 1983, approximately three million cubic yards of solid waste were deposited there. The exact dimensions of the bottom of the landfill are not known. However, existing boreholes indicate that the solid waste extends as deep as 130 feet in some places.

The Midway Landfill was created primarily to accept demolition materials, wood waste and other slowly decomposing materials. However, some hazardous wastes and industrial wastes, including approximately two million gallons of bulk industrial liquids from a single source, were also placed in the landfill. In 1980, a state-mandated screening process administered by the

Seattle-King County Department of Public Health was initiated to eliminate the disposal of any hazardous waste into Midway Landfill.

When the City closed the landfill in the fall of 1983, it began extensive testing of water and gas in the landfill and its vicinity. Samples of groundwater from monitoring wells in and around the landfill, and gas samples from gas probes, indicated the presence of organic and inorganic contaminants outside the landfill boundary. In 1985, Ecology also began investigating the site and found methane gas in nearby residences. Beginning in September 1985, the City of Seattle constructed gas migration control wells within the landfill property and gas extraction wells beyond the landfill property to control the subsurface migration of gas. Gas was found to have migrated up to 2600 feet beyond the landfill prior to installation of the gas extraction system.

In October 1984, Midway Landfill was nominated for inclusion on the federal National Priorities List (NPL) based on potential groundwater contamination. Following that nomination, Ecology was designated as the lead agency for the Midway Landfill Superfund action, pursuant to a Cooperative Agreement with EPA. In May 1986, Midway Landfill was placed on the NPL. In September 1988, the City of Seattle, which owns and had operated Midway Landfill, entered a Response Order on Consent with Ecology. This Response Order governed the preparation of a Remedial Investigation and a Remedial Action Feasibility Study (RI/FS) for the landfill.

In May 1990, prior to completion of the remedial investigation and feasibility studies, the City and Ecology entered into a consent decree pursuant to State of Washington Model Toxics Control Act (MTCA.) This legal agreement set forth Ecology's determination that undertaking certain remedial actions at Midway Landfill, prior to a Cleanup Action Plan (a MTCA decision document, similar to a Superfund ROD) would provide immediate protection to public health and the environment. In this consent decree, the City of Seattle agreed to finance and perform specific cleanup work. This cleanup work, or remedial action, had four elements:

- Construction of a landfill cover. The multi-layered Landfill Cover System ("cap") was to be comprised of layers (from bottom to top) of low permeability clayey silt/silty clay, a 50-mil synthetic membrane, a

geonet drainage layer, one foot of sand and one foot of topsoil planted with shallow rooted grasses. The landfill cover was designed to greatly reduce the amount of rain that would seep into the landfill and to control the post-closure escape of hazardous emissions from the landfill.

- Completion of a gas extraction system, including a Final Gas Manifold System to link onsite extraction wells to an enhanced motor blower and flare system. The purpose of the onsite extraction wells was to create a "vacuum curtain" around the closed landfill to prevent offsite migration of landfill gas, and to help draw previously migrated gas back to the landfill. The enhanced flares were installed to burn the extracted gas before discharge to the atmosphere. The gas extraction system also included approximately 127 offsite gas monitoring probes to provide data on the extent of landfill gas migration and the effectiveness of the extraction system.
- Completion of a surface water management system. This system consisted of site filling and grading to control surface water drainage to prevent surface water from infiltrating the landfill, construction of a 10 million gallon storm water detention pond with a permanent dewatering system, a controlled discharge structure, and rerouting of storm water from surrounding areas to prevent it from entering the landfill. This rerouting was done by diverting the Linda Heights Park drain and surface water runoff from I-5 to the detention pond.
- Preparation of a comprehensive operation and maintenance manual incorporating both short-term and long-term operation and maintenance requirements for all remedial actions implemented at the landfill as part of the Decree.

The Consent Decree also required the City to place a notice in the records of real property kept by the county auditor stating that the landfill was on the NPL, and serve a copy of the Decree upon any prospective purchaser, lessee, transferee, assignee, or other successor in interest to the property prior to the transfer of any legal or equitable interest in all or any portion of the landfill.

2. Type of Site

Municipal landfill.

3. Institutional Control Status

The following institutional controls have been implemented by the City of Seattle:

- Establish ^{in place, enforceable} permanent, legally binding, controls on the landfill property to ensure that the cap and containment systems are not damaged.
- Periodic notices to local agencies, water districts, and active well drillers, for the off-property groundwater contamination. ^{checking w/ Dep.}

4. Recent Events

In July, 2003, the Washington State Department of Transportation (WSDOT) will be conducting exploratory drilling to determine the extent of refuse placed by the City of Seattle in the WSDOT right of way of I-5.

Current Trend Data

As part of the 5-year review due in 2005, the most recent monitoring data will be evaluated to determine compliance with cleanup standards. The 5-year review is anticipated to be completed this fall.

5. Site Manager Concerns

None. Site manager is working with WSDOT and the City of Seattle to ensure widening of I-5 along the Midway Landfill will not adversely affect the control systems of the landfill remediation.

6. Five-Year Support Needs

None anticipated.

7. Estimated Deletion Date

Not sure of EPA process for deletion. The Midway Landfill will ^{not} be deleted from the State's list of contaminated site because of waste left in place.

8. Workload Issues

None.

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